

DOCUMENT RESUME

ED 058 574

CG 006 778

AUTHOR Pierce, Charles H.; Risley, Todd R.
TITLE Delayed Instructional Control of Head Start
Children's Free Play.
INSTITUTION Kansas Univ., Lawrence.
SPONS AGENCY National Inst. of Child Health and Human Development
(NIH), Bethesda, Md.; Office of Economic Opportunity,
Washington, D.C.
PUB DATE 6 Sep 70
NOTE 14p.; Paper presented at American Psychological
Association Annual Convention (78th, Miami, Fla.,
September 3-8, 1970)
AVAILABLE FROM Charles Pierce, Depts. of Recreation and Kinesiology,
Univ. of Waterloo, Waterloo, Ontario, Canada or Todd
Risley, Juniper Gardens Children's Project, 2021 N.
3rd St., Kansas City, Kansas 66101
EDRS PRICE MF-\$0.65 HC-\$3.29
DESCRIPTORS *Behavior Change; Discrimination Learning;
Instruction; *Operant Conditioning; *Play; *Preschool
Children; *Reinforcement

ABSTRACT

The free play of 5 black preschool Head Start children was observed. The variables manipulated in the study were delayed instructions and reinforcement for play with selected toys, and specific versus general instructions; the correspondence between the adult's instructions and reinforcement to the children's play was assessed. The data indicated that the children's free play was significantly differentially affected by the combination of verbal instructions and reinforcement even when free play occurred 21 hours later. The combination of instructions and reinforcement was effective, however, only when the selected toy was specified which suggests that the discriminative properties of the adult's instructions were a critical variable influencing children's free play. The results also suggest that not only should instructions be specific, but any changes in instructions should be specific too.

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRO-
DUCED EXACTLY AS RECEIVED FROM
THE PERSON OR ORGANIZATION ORIG-
INATING IT. POINTS OF VIEW OR OPIN-
IONS STATED DO NOT NECESSARILY
REPRESENT OFFICIAL POSITION OR POLICY.

Delayed Instructional Control of
Head Start Children's
1
Free Play

Charles H. Pierce and Todd R. Risley
University of Kansas

As students, teachers, and parents we all hope that what we say will affect what our listeners do. We also hope that our statements will have an enduring affect on our listener's behavior. It is especially important that verbal instructions influence the listener's behavior. Investigations of the effect of verbal instructions have generally indicated that instructions have, at best, a temporary effect unless they are accompanied by differential reinforcement of instruction-following behavior. These results have been obtained by Ayllon and Azrin (1964) with mental patients, by Hopkins (1968) with a retarded boy, by Packard (1970) and by Schutte and Hopkins (1970) with regular elementary and kindergarten children, and by Herman and Tramontana (1971) with Head Start children. Zimmerman, Zimmerman and Russell (1969) gave one set of verbal instructions to a whole class of retarded children. These studies have all examined instruction-following behavior when instructions immediately preceded the opportunity to follow these instructions.

Few studies have attempted to isolate the critical variables involved in instruction-following behavior. Although the combination of instruction and reinforcement is apparently a necessary one, further precision has been rarely attempted. The study by Zimmerman, Zimmerman, and Russell (1969) was one of the first to examine the

Pierce and Risley

page two

effects of different reinforcement procedures. Herman and Tramontona (1971) compared the effect of group and individual reinforcement contingencies and found little difference on instruction-following behavior. To our knowledge, no studies have compared the effects of different types of instructions. This study compared the effect of specific and general instructions on children's free play.

In many instances it is not possible or desirable to give instructions immediately preceding the opportunity to follow these instructions. For example a teacher may not wish to give instructions to a few children while the remainder of the class is waiting to begin their lesson. It would be more efficient if the teacher could give these instructions at a more convenient time. This study, then, also asked whether an adult's delayed instructions would have an enduring effect on children's free play.

METHOD

Subjects and Setting

Five children, three girls and two boys, enrolled in the Parent Co-operative Preschool of the Juniper Gardens Children's Project in Kansas City, Kansas (cf. Risley, 1968) served as subjects. All were four- to five-year old Negroes from large families with low incomes. School lasted for approximately three hours each day, Monday through Friday.

Pierce and Risley

page three

General Procedures

As soon as these children arrived at school (at about 8:30 a.m.) they came to a section of the preschool for fifteen minutes of free play. This section was approximately twelve square feet with a five foot partition separating it from the rest of the preschool.

Toys were placed at different locations within the play area with their position changed daily. The toys were Lincoln logs, rag dolls, cars, beads, and a nesting toy of assorted fruits. Several sets of each toy were provided so that all children could play with any one toy at the same time. These toys were only available at this time and were never displayed at other times. Throughout this study the children played with these toys with no adult interference.

Measurement and Reliability

An observer continuously recorded the toys played with by each of the children and the sequence in which each child played with the toys. The observer was never in the play area but stood behind the partition separating this area from the rest of the preschool. "Played with" was defined as manipulation of a toy for more than five seconds. So, for example, moving a toy aside or sitting on a toy was not counted.

A second person independently observed the children's play at least once during each condition. A disagreement could occur whenever both observers did not both note any one of the children playing with any one of the toys or when they differed regarding the sequence with which each toy was played. For example, if all five

Pierce and Risley

page four

children were present when reliability was assessed, then there were 25 possible disagreements since the children could play with any or all of the five toys. The senior author was the primary observer throughout the study. However, two other observers occasionally substituted for the senior author or served as second observers to assess reliability. Both were female teachers in the preschool; one was Black and lived in the Juniper Gardens area and the other was white and lived outside the area.

Procedural Variations

The variables that were manipulated in this study were delayed instructions and reinforcement for play with selected toys, specific versus general instructions, and the correspondence between the adult's instructions and reinforcement to the children's play.

Baseline

For the first six days the children played with the toys with no instructions. After fifteen minutes of free play they joined the other children in the preschool and "classes" began. During the free play period for these five children, the other children were arriving or playing in other areas of the preschool.

Toy Named

Throughout the remainder of the study these five children were assembled in the preschool office (at approximately 11:30 a.m.) after the formal classroom activities were completed and after they had finished lunch. These children gathered round a collection of

Pierce and Risley

page five

trinkets in the preschool office which was a setting different from the free play area. No change in the free play period was ever made throughout the study. At the time the children gathered in the office, which was three hours after the free play period, an adult told each of the children who had played with a specific toy that morning, "That was very good _____ (child's name), you played with the _____ (name of the toy)". This child was then offered a trinket of his choice and some M&Ms while the other children watched. This procedure was repeated for each of the children who had played with the selected toy. Nothing was said to the other children who had not played with the selected toy except, "Thank you, see you tomorrow." It should be emphasized that there was a minimum of 2½ hours between the adult's instructions and reinforcement and the next free play period.

Toy Not Named

During these conditions, the same procedures as in Toy Named were repeated except that now the toy was not named. Instead, the adult said to each child who had played with a selected toy, "That was very good _____ (child's name), you played with it." "IT" was never specified to the children. Each of these children were again, in turn, given their choice of a trinket and a few M&Ms while the other children watched. As before, nothing was said to the other children who had not played with the selected toy except, "Thank you, see you tomorrow." If none of the children had played with the selected toy, they were still gathered in the office at 11:30 a.m.

Pierce and Risley

page six

around the trinkets and were all told, "No one played with it. See you tommorrow."

No Correspondence

After session 54, the contingent relation between the children's free play and the adult's subsequent instructions and reinforcement was abandoned. None of the children had played with the rag dolls for the last 27 days. Beginning with session 54 and throughout this condition, the adult told each child that he had played with the dolls and gave him his choice of a trinket and a few M&Ms. This procedure was repeated for every child whether or not he had played with the dolls that morning.

RESULTS

Reliability

A second person independently observed the children's play at least once during each condition. Out of the possible 280 disagreements, the observers differed twice.

Baseline

The percent of children playing with each toy was used as the dependent measure due to occassional absences. For the first six days the children played with the toys with no instructions. During this baseline period (see Fig. 1) the percent of children playing with each toy remained relatively constant across sessions.

insert Figure 1 about here

Toy Named

On the seventh day these children were assembled in the preschool office three hours after the free play period. The senior author told the one child who had played with the fruit that morning: "That was very good, Lorrell, you played with the fruit." Lorrell was then given a trinket of his choice and a few M&Ms while the other children watched. Nothing was said to the other children who had not played with the fruit

that morning except, "Thank you, see you tomorrow."

Within two sessions all children were playing with the fruit and all continued playing with the fruit throughout this condition (see top graph, Figure 1). Between sessions 11 and 12, there was a 17 day break due to the preschool's Christmas recess. On the first day after the Christmas recess, all children again played with the fruit.

On session 12 the one child who had played with the cars that morning was told: "That was very good, Stephen, you played with the cars." He was then offered a trinket of his choice and a few M&Ms while the other children watched. The procedures followed in the earlier named condition were exactly repeated with the exception that the adult said cars rather than fruit and that only those children who had played with the cars that morning were rewarded at the end of the day. Car play gradually increased with all children playing with the cars for the last four sessions of this condition. During this condition play with fruit, the earlier named toy, decreased to approximately its baseline level.

Toy Not Named

Following session 21, the one child who had played with the beads that morning was told at the end of the day, "That was very good, Tanya, you played with it." Whenever a child had played with the beads he was rewarded and told that he had played with it. No effect on the children's play was obtained by the combination of verbal instruction and reinforcement when the toy was not named (see third graph, Figure 1). In fact, during two sessions none of

the children played with the beads. This necessitated changing the adult's instructions to: "No one played with it. See you tomorrow." During these sessions the children were gathered around the trinkets but no reinforcements were given.

This procedure was then repeated with fruit as the selected toy. The verbal instructions clearly had no effect when the toy was not named, for on six of the seven sessions no one played with it (see top graph, sessions 29-35, Figure 1).

Toy Named

After session 35 the adult said: "No one played with the fruit. See you tomorrow." Naming the toy produced an immediate and generally sustained increase in the percent of children playing with the fruit.

On day 50 the children were told: "No one played with the beads. See you tomorrow." As before, naming the toy produced an immediate and sustained increase in the percent of children playing with the beads.

No Correspondence

None of the children had played with the dolls for the last 27 days (see bottom graph, Figure 1). Beginning with session 54 and throughout this condition, the adult told each child that he had played with the dolls and gave him his choice of a trinket and a few M&Ms. This procedure was repeated for each child whether or not he had played with the dolls that morning. When correspondence between the adult's instructions and reinforcement and the children's

Pierce and Risley

page ten

play with a selected toy was not required, some of the children did play with the dolls. However, the percent of children playing with the dolls was quite variable and never reached 100 percent.

Toy Named

The last four days of the preschool year correspondence was again required. On these sessions only those children who had played with the dolls that morning were told they had done so and were offered a trinket. On the 71st day, the adult told the children: "No one played with the dolls. See you tomorrow." For these few sessions, the percent of children playing with the dolls was consistently higher than it had been throughout the study. All of the children for the first time now began playing with the dolls. The decrease in percent of children playing with the dolls on the third session of this condition was due to the return of one boy who had not been present since session 70.

DISCUSSION

These data indicate that Head Start children's free play may be differentially affected by the combination of verbal instructions and reinforcement. It is especially important to note that the adult's verbal instructions and reinforcement influenced the children's free play occurring 21 or more hours later. The fact that the combination of instructions and reinforcement ^{was} ~~were~~ only effective when the selected toy was clearly specified suggests that discriminative stimulus

Pierce and Risley

page eleven

properties of the adult's instructions were a critical variable influencing the children's free play. These results, then, support Skinner's (1957) analysis of the discriminative stimulus properties of verbal behavior and his description of instructions as discriminative stimuli (1968). These results also indicate that instructions will only serve as discriminative stimuli if they are specific and that specific instructions will be most effective if they have a contingent relation to the listener's behavior.

Throughout both "not named" conditions, it is interesting to note that most of the children continued playing with the cars, which was the last clearly named toy. The percent of children playing with cars only decreased to baseline levels after another toy was clearly specified. These results suggest not only that instructions should be specific but that any changes in instructions should be specific as well.

Pierce and Risley

REFERENCES

Ayllon, T. and Azrin, N. H. Reinforcement and instructions with mental patients. Journal of the Experimental Analysis of Behavior 1964, 7, 327-331.

Herman, S. H. and Tramontana, J. Instructions and group versus individual reinforcement in modifying disruptive group behavior. Journal of Applied Behavior Analysis, 1971, 4, 113-119.

Hopkins, B. L. Effects of candy and social reinforcement, instructions, and reinforcement schedule leaning on the modification and maintenance of smiling. Journal of Applied Behavior Analysis, 1968, 1, 121-129.

Packard, R. G. The control of "classroom attention": a group contingency for complex behavior. Journal of Applied Behavior Analysis, 1970, 3, 13-28.

Risley, T. R. Learning and Lollipops. Psychology Today, 1968, 1, Dec., 28-31

Schutte, R. C. and Hopkins, B. L. The effects of teacher attention on following instructions in a kindergarten class. Journal of Applied Behavior Analysis, 1970, 3, 117-122.

Skinner, B. F. Verbal behavior. New York: Appleton-Century-Crofts, 1957.

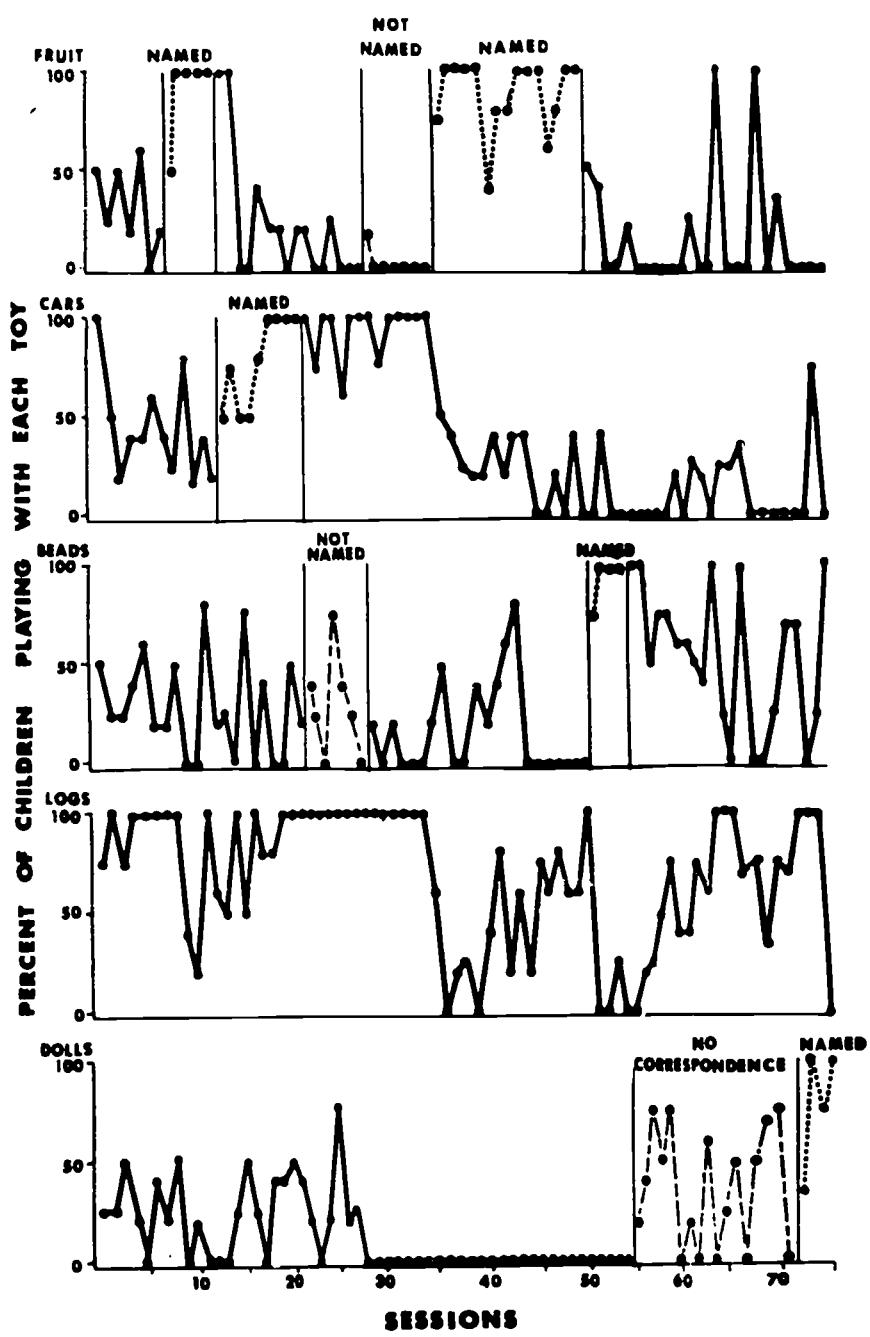
Skinner, B. F. The technology of teaching. New York: Appleton-Century-Crofts, 1968.

Zimmerman, E. H., Zimmerman, J., and Russell, C. D. Differential effects of token reinforcement on instruction-following behavior in retarded students instructed as a group. Journal of Applied Behavior Analysis, 1969, 2, 101-112.

Pierce and Risley

Figure Legend

Fig 1. The percent of children playing with each toy during the free play period. See the Procedures section of the text for a description of each condition.



Pierce and Risley

FOOTNOTE

1. The cooperation of Mrs. Joan Brigham and Mrs. Barbara Hughes of the Juniper Gardens Parent Co-operative Preschool is gratefully acknowledged and appreciated. This research was supported by Grants (CG-8474) from the Office of Economic Opportunity, Head Start Research and Demonstration, and by PHS Training Grant HD 00183 from the National Institute of Child Health and Human Development to the Kansas Center for Research in Mental Retardation and Human Development. Portions of this paper were presented to the American Psychological Association, 78th Annual Convention, Miami, Florida, September 6, 1970. Reprints may be obtained from Charles Pierce, Departments of Recreation and Kinesiology, University of Waterloo, Waterloo, Ontario, Canada or from Todd Risley, Juniper Gardens Children's Project, 2021 North Third Street, Kansas City, Kansas 66101, U.S.A.